Special Issue

Astrophysical Neutrinos in the Multi-Messenger Era and Their Broken Symmetries

Message from the Guest Editor

- Neutrino astronomy is the most promising among the astroparticle messengers. Neutrinos are emitted from the sun to supernovas, AGN, mergers, and all other sources. Given the nature of the neutrinos, they are the most direct indicator of weak interaction physics from astrophysical phenomena. This makes them the most reliable messenger to the others: cosmic rays, gammas, and gravitational waves. Furthermore, studying astrophysical neutrinos opens channels in neutrino physics which are yet to be fully understood and included in the standard model of particles, encouraging explorations of flavor oscillations, mass, chirality, and other broken symmetries.
- In an era of multi-messengers and new installations of detectors around the world, this Special Issue aims to collect novel research and experimental results around neutrino astronomy, from new analysis techniques and updates on technology to their interconnections with other messengers and recent advances in neutrino physics in the astrophysical sector.

Guest Editor

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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

Editor-in-Chief

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